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Trioza flixiana sp. n. (Hemiptera, Psylloidea), a new jumping plant-louse species from Central Europe

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***Trioza flixiana* sp. n. (Hemiptera, Psylloidea), a new jumping plant-louse species from Central Europe.** - *Trioza flixiana* sp. n. is described from several localities in Switzerland. The species is closely related to *T. cirsii* from which it differs in details of the male paramere, the aedeagal apex, the female proctiger, the antennal colour and the longer terminal setae on antennal segment 10. Larvae are so far unknown.

Key-words: Psylloidea - *Trioza* - taxonomy - new taxon - Central Europe - *Cirsium* - Asteraceae.

INTRODUCTION

On 3 June 2000 some 70 biologists met on Alp Flix, Sur (Switzerland, Graubünden) for collecting and naming as many species of organisms as possible. During a 24 h effort 2092 species could be recorded (Hänggi & Müller, 2001). Three species new for science were among the slightly over 2000 species, in addition to several new records for Switzerland (Hänggi & Müller, 2001; Haenni, 2001). Two of the three new species are insects which is hardly surprising given the size of the group in terms of species numbers and the relatively poor knowledge of the group in Switzerland (Burckhardt, 2000). Recently Haenni (2001) described the new scatopsid fly. Here the new psylloid species is described which belongs to the large artificial genus *Trioza* (Triozidae).

The new triozid is morphologically similar and probably closely related to the European *Trioza cirsii* Löw, *T. viridula* (Zetterstedt) and *T. agrophila* Löw which are all associated with *Cirsium* spp. (Asteraceae).

MATERIAL AND METHODS

The material comes from the collections of the Moravské Muzeum, Brno (MMBC), Muséum d'histoire naturelle, Geneva (MHNG) and Naturhistorisches Museum, Basel (NHMB). Specimens are dry or slide mounted.

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The morphological terminology follows mostly Ossiannilsson (1992). For preparing the drawings and taking the measurements specimens were permanently mounted in Canada balsam or euparal.

TAXONOMIC TREATMENT

Trioza flixiana sp. n. Figs 1, 3, 5, 7

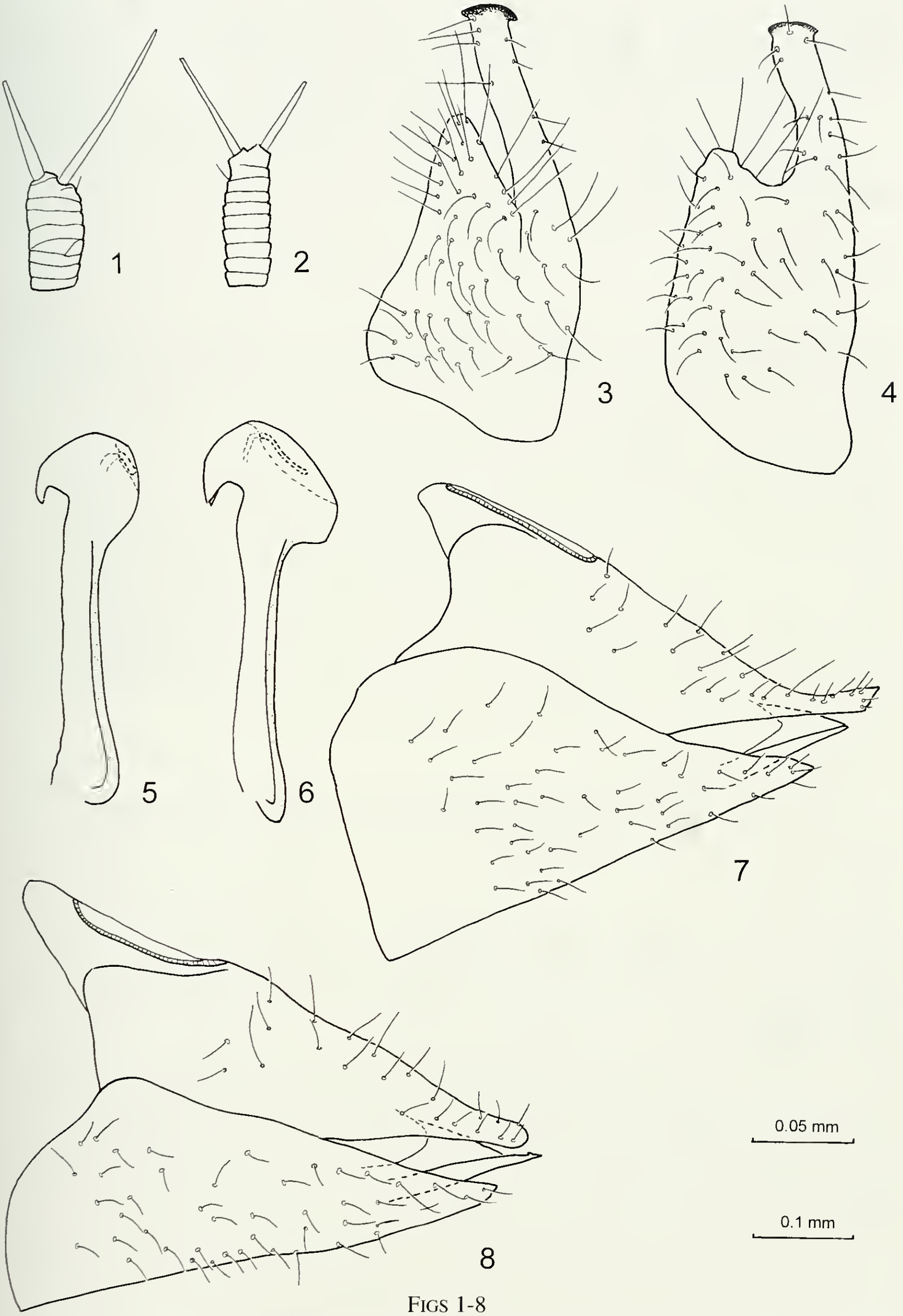
Holotype ♂, **Switzerland**: Graubünden, Sur, Stavel, 1800 m, 21.vi.2002, swept from *Cirsium spinossissimum* (D. Burckhardt & P. Lauterer), dry mounted (NHMB).

Paratypes. **Austria**: 1 ♂, 1 ♀, Kärnten, Glockner, Guttal, area of the Glockner-Hochalpen road, 1700 m, 29.vi.-11.viii.1978 (K. Thaler), dry mounted (MHNG). **Switzerland**: Basel-Land, 1 ♂, Reigoldswil, Bürten, 14.ix.1945, *Picea abies* (H. Schaefer), dry mounted (NHMB); 1 ♂, same data but Reigoldswil, Vogelberghöhe, 13.x.1945. - Bern, 1 ♂, Orvin, Jorat, 750 m, 24.iv.1980, *Picea abies* (D. Burckhardt), slide mounted (MHNG); 1 ♂, 1 ♀, same data but Prés d'Orvin, 15.v.1980. - Graubünden: 2 ♂, 4 ♀, same data as holotype (MMBC, NHMB); 1 ♂, Sur, Alp Flix, Gioppas, 1900-2000 m, 3.vi.2000 (D.Mifsud), dry mounted (NHMB); 1 ♂, 2 ♀, Engadin, above Ramosch, 1600-1700 m, 25.v.1980, *Picea abies* and *Pinus silvestris* (D. Burckhardt), dry and slide mounted (MHNG); 1 ♂, same but Resgia, 1080 m, 26.v.1980, *Picea abies*, dry mounted; 2 ♂, Misox, Val d'Albiniasco, 1800 m, 4.ix.1979, *Picea abies* (D. Burckhardt), slide mounted (MHNG). - Neuchâtel, 1 ♀, La Chaux d'Amin, 1340-1360 m, 9.iv.1979, *Picea abies* (D. Burckhardt), dry mounted (MHNG). - Obwalden, 1 ♀, Pilatus, Matt, 1640 m, 6.ix.1986, conifers (D. Burckhardt), dry mounted (MHNG); 1 ♂, same data but 9.x.1988; 1 ♂, 1 ♀, same data but Pilatus, Aemsigen, 1600 m, 15.x.1999 (NHMB). - Schwyz, 1 ♂, Rigi, Staffel, 7.ix.1979, *Picea abies* (D. Burckhardt), dry mounted (MHNG); 1 ♂, 1 ♀, same data but Rigi, Staffel to Kulm, 1600-1800 m, 13.v.2000 (NHMB); 2 ♂, same data but 9.vi.2000, *Cirsium* sp.; 1 ♂, same data but Kulm, 1700 m, 16.x.1999, *Picea abies*; 1 ♀, same data but 12.vi.1981 (L. Rezbanyai-Reser), slide mounted (MHNG). - Solothurn, 1 ♂, Chluser Roggen, 740 m, 19.v.1980, *Picea abies* (D. Burckhardt), slide mounted (MHNG). - Valais, 1 ♀, Laggin Valley, 1240 m, 12.ix.1979, herbaceous vegetation (D. Burckhardt), dry mounted (MHNG). - Vaud, 1 ♀, Pays d'Enhaut, Gérine Valley, 1320 m, herbaceous vegetation (D. Burckhardt), slide mounted (MHNG).

Material not included in type series. **Czech Republic**: 1 ♀, Moravia borealis, Valšovský Žleb towards Rešov, 30.iv.1961 (P. Lauterer) (MMBC). **Slovakia**: 2 ♂, Belanské Tatry Mts., Bujačí Vrch Mt., Velký Ovčí Komín slope, 1300-1600 m, 20.vii.1962, (P. Lauterer) (MMBC); 1 ♂, same data but part Červená Hlína, 1400-1500 m, 21.vii.1962; 1 ♂, same data but Kobylí vrch Mt.,1100 m, 7.ix.1967; 3 ♀ same data but Velký Ovčí Komín slope, 1550-1650 m, 9.ix.1967; 2 ♀, Roháče (= Liptovske Hole) Mts., Rohacské Lake surroundings, 1700 m, 24.vi.1971 (P. Lauterer) (MMBC).

Description. Adult. Coloration. General coloration green or yellow; antenna yellowish, ochreous with segments 9 and 10 black. Anterior part of mesopraescutum, two or four longitudinal stripes on mesoscutum, mesothoracic venter, and sometimes abdominal ventrites brown to dark brown. Forewing with yellow veins and colourless to whitish, transparent membrane. Legs entirely light ochreous or with dark brown patches on the femora, light brown tibiae and yellowish tarsi. Apex of paramere black. Young specimens with less dark colour.

Morphology. Head narrower than mesoscutum, inclined in a 45° angle from the longitudinal body axis. Genal processes about two thirds length of vertex along midline, pointed apically. Antenna with conspicuously long terminal setae on segment 10 (fig. 1). Forewing long narrow, widest in apical two thirds to three quarters; apex bluntly angular. Surface spinules covering all cells, leaving narrow spinule-free stripes along the veins; regularly, sparsely spaced. Metatibia with 1+3 apical sclerotised spurs.



FIGS 1-8

Trioza spp. 1, 2: Antennal segment 10 with terminal setae; 3, 4: inner face of paramere; 5, 6: distal segment of aedeagus; 7, 8: female terminalia. 1, 3, 5, 7: *T. flixiana* sp. n.; 2, 4, 6, 8: *T. cirsii* Löw. Scale lines: figs 1-6 = 0.05 mm; figs 7, 8 = 0.1 mm.

Terminalia as in figs 3, 5, 7. Paramere with very large anterior lobe. Apex of distal portion of aedeagus almost globular; sclerotised end tube of ductus ejaculatorius short. Female proctiger long, with concave dorsal margin, apex truncate.

Larva unknown.

Host plant unknown. Some adults have been collected on *Cirsium spinossissimum* (Asteraceae) which is a likely host. Most specimens have been collected from conifers suggesting that the species overwinters as adult on conifers.

CONCLUSIONS

Trioza flixiana sp. n. is morphologically similar to *Trioza cirsii* Löw, *T. viridula* (Zetterstedt) and *T. agrophila* (Löw). *T. flixiana* differs from the other three species in the very large anterior lobe of the parameres (fig. 3) which is small or absent in *T. cirsii* (fig. 4) and *T. viridula*, and absent in *T. agrophila*, and the very long terminal setae on antennal segment 10 (fig. 1) which are much shorter in the other three species (fig. 2). From *T. cirsii* with which it was often collected together, it differs also in the ochreous to light brown antennal segments 6-8 which are dark brown to black in *T. cirsii*, in the smaller apical dilatation of the distal aedeagal segment (fig. 5) which is large in *T. cirsii* (fig. 6), in the short sclerotised end tube of the ductus ejaculatorius (fig. 5) which is large in *T. cirsii* (fig. 6), and in the larger female proctiger with concave dorsal margin and truncate apex (fig. 7) which is shorter and with undulating dorsal margin and rounded apex in *T. cirsii* (fig. 8). The female terminalia of *T. flixiana* and *T. agrophila* are similar but the procter and subgenital plate of the former are slightly shorter and the subgenital plate less pointed apically.

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REFERENCES

Burckhardt, D. 2000. Entomofaunistik in der Schweiz. *Entomologia Basiliensia* 22: 31-43.

Haenni, J.-P. 2001. *Rhexoza flixella* sp. nov. (Diptera, Scatopsidae), eine neue Art aus den Bündner Alpen. *Jahresberichte der Naturforschenden Gesellschaft Graubünden* 110 (2001): 39-43.

Hänggi, A. & Müller, J. P. 2001. Eine 24-Stunden Aktion zur Erfassung der Biodiversität auf der Alp Flix (Graubünden): Methoden und Resultate. *Jahresberichte der Naturforschenden Gesellschaft Graubünden* 110 (2001): 5-36.

Ossiannilsson, F. 1992. The Psylloidea (Homoptera) of Fennoscandia and Denmark. *Fauna Entomologica Scandinavia* 26: 1-247.